

THE FIFTH INTERNATIONAL CONFERENCE ON MARS

JULY 18 - 23, 1999

PASADENA, CALIFORNIA

<http://cass.jsc.nasa.gov/meetings/5thMars99/>

SECOND ANNOUNCEMENT March 1999

Sponsors:

California Institute of Technology
Jet Propulsion Laboratory
Lunar and Planetary Institute
National Aeronautics and Space Administration

Conveners:

Matthew Golombek—Mars Pathfinder Mission
Arden Albee—Mars Global Surveyor Mission
Richard Zurek—Mars 98 Mission
Daniel McCleese—Mars Program

Contact:

Arden Albee
Graduate Office, Mail Stop 02-31
California Institute of Technology
Pasadena, CA 91125
Phone: 626-395-6367
Fax: 626-577-9246
E-mail: 5thMars99@caltech.edu

PURPOSE AND SCOPE:

The Fifth International Conference on Mars will be held at the California Institute of Technology (Caltech), July 18-23, 1999. At that time a flotilla of new missions will be either sending new data back from Mars or will be on their way to Mars. The first such conference was held in 1973 as data was being returned from Mariner 9. Conferences were convened in 1979 and 1981 as data was returned from Viking. The fourth conference, in 1989, reviewed ten years of analysis of the Viking data and resulted in the publication of the classic 1498 page volume entitled *Mars*.

This conference will provide an opportunity to review summaries of the new measurements from lead investigators, to hear interpretations of the recent results in the context of what we already know, and to engage in discussions concerning the significance of these results. Sessions will be organized around major scientific topics that integrate across disciplines and measurements.

Each of the half-day sessions will include three invited overview papers, as well as shorter contributions, short comments, and posters. Contributors should assume that all attendees are quite familiar with the published data and ideas on Mars. The invited speakers for the overview papers will provide up to 4 page extended abstracts, which will be posted on the Web about April 12, in advance of the general abstract deadline. Posting of the overview papers is intended to evoke alternative interpretations or additional insights from the later contributors.

THE SECOND ANNOUNCEMENT:

This announcement contains meeting information, the current program based on the invited overview papers, registration forms, and instructions for the preparation of conference abstracts. Also included is hotel and special event information. The sessions will be held in Ramo Auditorium on the Caltech campus and poster sessions will be held in the adjacent Dabney Gardens and Lounge. Coffee breaks and box lunches will be available in the same area. Some alternative arrangements may be necessary if there is an excessive number of

registrants. In such an event any changes will be posted on the Web and pre-registrants will be informed by e-mail or mail.

SCHEDULE:

Dec 1, 1998	First announcement
Jan 15, 1999	Indication of interest, response by E-mail
Mar 1, 1999	Second announcement mailed
April 12, 1999	Deadline for extended abstracts for overview papers-
April 19, 1999	Overview papers posted on Web
May 17, 1999	Deadline for abstracts for contributions and comments
June 8, 1999	Accepted abstracts posted on Web
June 15, 1999	Pre-Registration deadline
July 17, 1999	Registration and reception at Caltech Athenaeum
July 18-23, 1999	Fifth International Conference on Mars

SUMMARY PROGRAM OF INVITED OVERVIEW PAPERS AND AUTHORS

The contributors for the overview papers are listed in the following program, although we do not have firm acceptances from all of them. It should be noted that most of the contributors for the overview papers are invited because they have prime access to the current data sets as team leaders or team members on the current missions.

MONDAY AM:

Introduction to the Conference —A. Albee

The Martian Archives -- Now and Future —R. Arvidson

The Martian Interior - Origin, structure, bulk composition, thermal history, history of global magnetic field.

D. Stevenson	Origin and the first billion years of Mars
J. Longhi	Constraints on the bulk composition of Mars from studies of Martian meteorites

M. Acuna & J. Connerney	Unraveling the history of the Martian intrinsic magnetic field and its remnant remains.
----------------------------	---

MONDAY PM:

The Martian Crust - History of volcanism and tectonism, stress and tectonics, global dichotomy, coupling of thermal history to surface geology; gravity and topography.

S. Solomon	New insights into the thermal history and crustal thickness
D. Smith	Implications of the improved understanding of the gravitational and topographic fields
A. McEwen	Stratigraphy of the upper crust

TUESDAY AM:

Upper Atmosphere and Volatile Evolution - Molecular and isotopic composition of the atmosphere through time, upper-atmosphere structure, solar-wind interactions and integrated escape rates, evolution of global magnetic field, isotopic measurements of trapped atmosphere in Martian meteorites.

D. Mitchell & R. Lin	Current spacecraft observations of solar-wind interactions at Mars and understanding of the escape rates
V. Krasnopolsky, & T. Owen, et al	High-resolution spectroscopy of Mars: recent results and implications for atmospheric evolution
S. Bougher	Structure of the upper atmosphere

TUESDAY PM:

Structure and Dynamics of the Atmosphere - Thermal structure and dynamics of the atmosphere as it changes with seasons, influence of dust loading, global wave structure, initiation and spread of storms, improved models and data assimilation.

B. Conrath	Observations of the thermal structure and dynamics of the atmosphere
R. Haberle	Modeling and data assimilation of atmosphere structure and dynamics
J. Barnes	Initiation, spread, and structure of storms

WEDNESDAY AM:

Surface History - Water, Tectonics and Volcanism - Global history of water at the surface; canyons, channels, valleys, lakes, and oceans, ice in the regolith, localized ground water systems, global history of volcanism and tectonism, stress and tectonics, volcanic stratigraphy, composition of volcanic rocks.

M. Carr	Global history of water and climate as inferred from the geology
M. Golombek	Global tectonics
J. Head	Global volcanism

WEDNESDAY PM:

The Outer Surface - Aeolian Processes and Surface Materials - Aeolian processes, size distribution, mineralogical and chemical composition of the detritus, downslope processes, playas, cements, the surface of Phobos.

M. Malin	A new paradigm for surface processes
P. Christensen	Global view of surface mineralogy
J. Bell	Nature and origin of the surface materials

THURSDAY AM:

Seasonal Changes - Water, Dust, and Carbon Dioxide - Seasonal behavior of water, dust, condensates, polar caps, the record--cyclic or random.

T. Clancy	The Water Cycle—sinks and sources, cause and effect
P. James	The Dust Cycle—sinks and sources, cause and effect
H. Kieffer	The Carbon Dioxide Cycle—sinks and sources, cause and effect

THURSDAY PM:

Climate Evolution and Polar Caps - Coupling of seasonal cycles to quasi-periodic climate changes, evidence for climate changes, spin-orbit dynamical history and climate change.

M. Zuber	Structure of polar deposits
R. Zurek	Inter-annual variability of the seasonal cycles
J. Kasting	History of atmosphere and climate

FRIDAY AM:

Biological Potential - Potential for life at Mars, evidence for biology in ALH84001, extant life, past life, identification of life at Mars, bio-indicators and bio-habitats.

D. McKay	Bio-indicators in ALH 84001!!!
A. Treiman	Bio-indicators in ALH 84001 ???
K. Nealson	Bio-indicators and searching for life on Mars

FRIDAY PM:

Mars as a Planet in the Solar System - The Future

D. McCleese	The next decade of Martian exploration
B. Jakosky	Why Mars? — exploring Mars and the nature of human civilization
C. P. McKay	Bringing life to Mars

CALL FOR ABSTRACTS

The program committee will establish the conference program on the basis of two separate abstract submittals. Extended abstracts for the overview invited papers must not exceed 4 pages and contributed abstracts must not exceed 2 pages, including graphics, tables and references. Extended abstracts for the invited theme papers must be submitted by April 12, 1999 so that they can be posted on the Web prior to the submittal date for contributed papers. Posting of the abstracts for the overview papers is intended to evoke responses and the program committee will put priority on selecting contributed abstracts that provide alternative interpretations, additional insights or new data.

Contributed abstracts should be directed to one of the thirty overview paper sessions listed in the program above. Each hour will contain a

mixture of an overview paper, short comments (5 minutes) and short contributions (10 minutes), and discussion to be followed by a poster session during the same half-day. Experience indicates that the discussions will continue over laptops filled with the new data. Short comments should be less than 4 vu-graphs, the most important of which should be included in the abstract. Short contributions should include no more than 8 vu-graphs, the most important of which should be included

in the abstract. The program committee will assign each abstract to oral or poster presentation and will assign each oral abstract its presentation length in a particular session. Poster contributions on other Mars topics and print-only presentations may be accepted. The deadline for abstracts for oral comments, oral contributions and posters is **May 17, 1999**. A poster period will be included with the morning and afternoon break and during the lunch on the same day. Authors should be present during that period. It is anticipated that some capability to charge laptops and to log on will be provided, but it will probably not be available at each poster site.

The abstracts and preliminary program will be available on line in PDF format, viewable with version 3.0 or higher of Adobe Acrobat Reader, which can be downloaded free of charge from the Adobe Home Page (<http://www.adobe.com>).

Abstract Deadlines:

Deadline for invited submission:	April 12, 1999
Deadline for contributed submission:	May 17, 1999

Your abstract must be submitted electronically via the Web and cannot be sent by e-mail. Complete details for preparing and submitting your abstract can be found at the meeting Web site. The Web site provides templates and detailed instructions for a number of common formats. Netscape Navigator (version 2.0 or higher) and Microsoft Internet Explorer (version 4.0 only) support the file-upload mechanism used with the electronic abstract submission form. In order to provide sufficient information for browsing the program we strongly encourage authors to use informative and extended titles for their abstracts, as these titles will be included in the program booklet.

ABSTRACT VOLUME AND PROGRAM:

All attendees of the conference will receive the abstract volume on a CD-ROM as part of their registration fee in a format similar to that established by the LPSC meeting. The program booklet will include an abstract number for each paper to facilitate locating and referencing abstracts in the CD-ROM. No other publication is planned, but the extended abstracts can be referenced, as are those for the LPSC meetings. The MGS team is planning a special issue in SCIENCE to coincide with the meeting. It will provide additional data for the discussions at the conference.

SOCIAL EVENTS:

A Bar-B-Q is planned for Tuesday evening and a more formal dinner is planned for Thursday evening at the Caltech Athenaeum. Details will be contained in a mailing that will be sent to the registrants along with details of any other events that may be planned.

REGISTRATION

A fee of \$200 (\$75 for students) will be assessed each participant to cover conference services. You must pre-register and prepay by June 15 to avoid the \$20 late fee. Students should also pre-register and must present a valid form of student I.D. when checking in at the registration desk. A pre-registration form is enclosed.

SUNDAY NIGHT REGISTRATION AND RECEPTION:

The Sunday night registration and reception will take place in the patio of the Caltech Athenaeum from 5:00 p.m. to 8:00 p.m.

HOTEL RESERVATIONS

A list of local hotels and a map of Pasadena is enclosed. Making reservations is the responsibility of each participant.

FORMS AND INFORMATION:

For forms and updated information, you can access the conference Web page at:

<http://cass.jsc.nasa.gov/meetings/5thMars99/>

For specialized questions contact: 5thMars99@caltech.edu